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**BEYOND C2:  
A CONCEPT FOR COMPREHENSIVE  
COMMAND AND COORDINATION  
OF THE  
MARINE AIR-GROUND TASK FORCE**

Our world has witnessed tremendous change in the past two decades, and the rate of change continues to accelerate. The next century will see a dynamic, volatile world characterized by inherent complexity and unprecedented levels of global interaction and connectivity. Consequently, our Nation must change the way it projects military power. *Beyond C2: A Concept for Comprehensive Command and Coordination of the Marine Air-Ground Task Force* describes this diverse environment and seeks to outline a transformational departure from traditional notions of "command and control." It envisions new capabilities whereby *control* is imbedded within our philosophy of *command*, and forward deployed commanders exploit the entire spectrum of our national power to conduct military operations in support of national interests. This concept will initiate the dialogue and guide the process of research and experimentation necessary to help us find solutions to the challenges of the 21st Century.



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General, U.S. Marine Corps  
Commandant of the Marine Corps

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# Beyond C2: A Concept for Comprehensive Command and Coordination of the Marine Air-Ground Task Force

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## INTRODUCTION

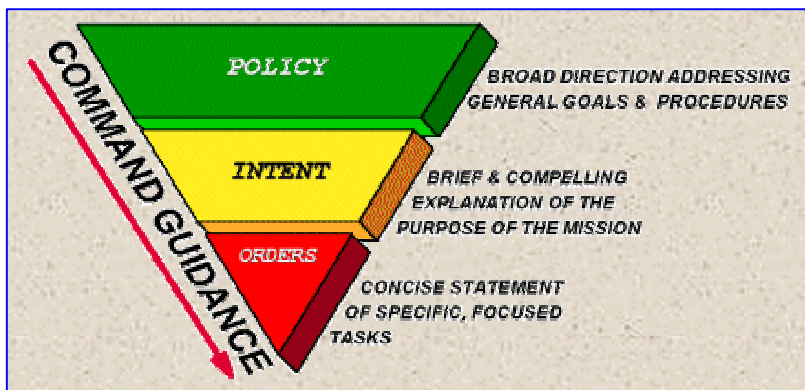
As Marines learned in Lebanon, the Los Angeles riots, Somalia, Haiti, and Bosnia, conflict is becoming less “traditional.” The future will bring new threats, fueled—at least in part—by a continuing breakdown in societal order. Street gangs, clans and transnational adversaries will wage the war of “all against



all,” as the proliferation of high-technology weapons and information systems encourages our opponents to attempt asymmetrical forms of attack against our perceived critical vulnerabilities. To maintain the primacy of the Marine air-ground task force (MAGTF) as the Nation’s force of choice in complex contingency operations, our command and control philosophy will adapt to meet the new multidimensional stresses imposed by evolving, dynamic environments.

The warfighting philosophy of the Marine Corps is *maneuver warfare*. This philosophy recognizes that all military evolutions, from major theater wars to the complex contingencies encountered in other expeditionary operations, occur in an inherently uncertain and chaotic environment shaped by continuous human interaction. The human influence on war takes two forms. First, war is and will remain a clash of hostile wills. The enemy is unpredictable and beyond our capacity to “control,” while similarly, we strive to operate in a manner, which

makes our own actions unpredictable to the enemy. Second, leaders and their subordinates interact with one another: leaders issue guidance in the form of *policy*, *intent*, and *orders*, while subordinates provide feedback through reports, as well as through the operational results of their actions. The Marine Corps, by virtue of its mission as a seabased, forward deployed, air-ground force in readiness, is uniquely positioned to move beyond today's notions of command and "control."



Human influence is an immutable, defining characteristic of war. On the one hand, it contributes powerfully to the "fog and friction" which increase the difficulty of conducting operations. On the other hand, human influence is a source of incredible creativity through which leaders and their subordinates overcome obstacles and accomplish their missions. The systems and processes through which a commander shapes events must function within the context of war's unpredictability and must exploit the powerful positive effects of human influence. Traditional forms of command and control will evolve as Marine leaders continue to *command* while exerting *control* through command, not through the technologies that have come to be viewed by some as synonymous with "control." We must envision the day when mechanistic control will be replaced by broad *coordination*. ***The aim of MAGTF comprehensive command and coordination is to empower commanders at every level to focus resources upon a mission, while enabling the inventiveness and initiative of subordinates.***

MAGTF comprehensive command and coordination will be optimized for maneuver warfare in highly complex future operating environments. It will incorporate the best features of flexible and decentralized *mission command and control* by providing for harmony of effort while

- **Fog** is uncertainty—about the enemy, their culture, the local indigenous population, the terrain and weather, and even the status of our own forces. It is an inherent feature of any military operation. In some cases, we might have little or no information about a situation; in other cases, the available information might be confusing, conflicting, or incomplete. In almost *all* cases, commanders and staffs will operate under severe time constraints, with little time to make critical decisions. Marine leaders must manage the level of uncertainty, while still recognizing that it can never be completely eliminated.
- **Friction** is the force that resists action and saps energy. It results from a combination of internal and external factors, such as enemy action, unfavorable weather, imperfect interfaces between units, faults or strains in processes, or the use of overly complex technology. We accept that such encumbrances can never be eliminated from warfare. Comprehensive command and coordination will help commanders operate effectively *despite* the influence of friction.

eschewing unnecessary control measures which limit the initiative of leaders. Further, it will address the full range of capabilities which might be wielded by a commander, going beyond the conventional forms of military force and extending to the more non-traditional elements of national power: diplomatic, commercial, intellectual, experiential, and many others. The result will be an integrated organic whole, capable of crisis deterrence and response, and combining a broad range of military capabilities with disparate, non-military forms of pressure and influence while preserving freedom of action at every level.

## FRAMING A NEW CAPABILITY

To create and sustain a capability for comprehensive command and coordination of the MAGTF, we must embrace new ways and means for guiding future evolutions in the exercise of command. Certain characteristics are central to the development of the doctrine, organizational structures, training and education, equipment, and support

### CHARACTERISTICS OF COMPREHENSIVE COMMAND AND COORDINATION

- Facilitates interconnectivity/reach-back
- Supports Operational Maneuver from the Sea
- Performs effectively across the range of operations
- Serves as a “cornerstone”
- Creates a learning organization
- Encourages intuitive decisionmaking
- Enables mutual understanding with limited exchange of data
- Exploits the power of implicit communications

mechanisms, which will achieve our aim.

## **FACILITATES INTERCONNECTIVITY/REACH-BACK**

In the complex, chaotic environments of the future, MAGTF commanders will find many unique and useful resources beyond the borders of the MAGTF through a seamless, worldwide command information architecture. The development of a “reach-back” capability will facilitate access to a wide range of information, materiel and expertise not formerly available to the MAGTF, regardless of the relative physical locations of the MAGTF and the supporting assets or individuals involved. Reach-back will play a pivotal role in the MAGTF commander’s ability to significantly increase operational, even cultural, awareness prior to initiating actions and in the development of plans and formulation of commander’s intent.

Reach-back is best described as “direct interconnectivity,” since commanders will use this capability not only to reach-back to the US, but also to reach *out* to adjacent units, or to reach *forward* to personnel or organizations which may already be located within their areas of interest. Requests for support might be focused at a specific organization, or broadcast to several agencies which could potentially provide the required capability. Responses back to the MAGTF would be direct and timely, yet must also inform all senior leaders in the chain. Capabilities provided to forward deployed forces could come from a myriad of sources, including:

- **Military Organizations.** Capabilities could be provided through direct MAGTF connectivity to all senior and subordinate elements, as well as to other joint and combined forces.
- **Other Government Organizations.** MAGTF missions may require worldwide direct interconnectivity with any number of diverse agencies or organizations—to include all major governmental departments, as well as other government agencies. Uninterrupted MAGTF “reach-back” will enhance interagency coordination and will provide the MAGTF commander with the means to access critical government capabilities. We must leverage such efforts as the Joint Interagency Task Force and Marine Corps Chemical-Biological Incident Response Force to develop an interconnected coordination capability.

- **Non-Government Organizations.** MAGTFs will connect, communicate, and coordinate with non-government organizations (NGOs), private volunteer organizations (PVOs) and other international organizations, not only in support of worldwide humanitarian operations, but also other forms of complex contingencies.
- **Academia.** A key component of our knowledge strategy is to further empower MAGTF commanders through reach-back access to the wealth of technical and sociological knowledge possessed by our academic community. Close connectivity to military war colleges, Service and civil research and development laboratories/centers, simulation facilities and military doctrine and experimentation centers must be pursued, established and maintained. Connectivity through Marine Corps Fellowship students to major civilian institutions of higher learning will ensure that our Nation's keenest minds are afforded the opportunity to stand with us as we face new crises.
- **Business.** Connectivity must be established with both national and international business organizations to ensure access to cutting-edge technology, techniques and business applications. Marines will focus on the development of proactive decisionmaking and solution-development partnerships with all aspects of business, to capture the essence of their entrepreneurial spirit and their aggressive, agile, and competitive approach to problem solving.
- **Technology.** While generally considered an enabler for the capability sources described above, new technologies can also be leveraged throughout the information architecture to provide automatic feedback relative to a commander's critical information requirements. A network of sensors, intelligence organizations, academic libraries, and internet sources could be programmed to respond in accordance with pre-set criteria—or "trip-wires"—to generate data concerning the MAGTF commander's key areas of interest and intent.

Linkages and connectivity will become transparent. Through meticulous orchestration of this vast array of resources, the forward deployed commander will forge formidable coalitions. From the reduction of uncertainty surrounding an enemy's capabilities and intentions, to the rapid identification and dissemination of critical adversary cultural

biases or thought processes, interconnectivity and reach-back will support the commander through all phases of an operation. The intent is to unify the efforts of all elements of our national power, including the power contributed by friends and allies, thereby enabling a focused synergy. These new connections can resolve many problems rapidly, and reduce costly and time consuming duplications of effort between military, government and non-government agencies. Once connectivity is established, the capabilities provided in response to MAGTF requests will take the form of:

- **Information.** Information of value to the MAGTF commander will be available through the intellectual, operational, experiential, medical and cultural resources found in government agencies, NGOs, commercial interests, academia and across the entire spectrum of technology. In most cases, the MAGTF commander will seek direct assistance regarding a potential adversary's cultural attributes, doctrine, capabilities and limitations, political motives or objectives, and the adversary's potential for using weapons of mass destruction. This will require not only physical communications connectivity, but also the capability to analyze and filter incoming information to ensure that it is free from agenda-based biases which could become attached to the source. Validated information would then be provided to adjacent and subordinate commanders over the command information architecture to ensure shared situational awareness at all levels of command. New means, however, will be necessary to support civil-military relationships and information exchange requirements.
- **Pressure.** A MAGTF commander will often require the ability to apply pressure or exert influence to affect the character of activity within the environment, or upon the capabilities of a potential adversary. Pressure may be exercised through economic, diplomatic, informational or physical capacities, and could be derived from commercial interests, academia, NGOs and government sources.
- **Networks.** Diplomatic entities, NGOs and the business community maintain capabilities around the world to enhance their access in various regions. In some cases, these are communications networks in the familiar sense, which provide for the transfer of data. In other cases, these are "organic networks" consisting of people who interact regularly through personal contact. Commanders must be afforded



the opportunity to exploit existing regional networks or to use diplomatic, academic, or business ties to create networks.

- **Military Forces.** Specialized, task-organized groupings of military personnel and materiel will be requested, as needed, and will augment the MAGTF by providing additional mission-specific capabilities which can be deployed with the MAGTF or can be made available through reach-back.
- **Non-military Government Forces.** These forces include groupings of personnel and materiel originating from government agencies, to include the intelligence community, legal/law enforcement organizations, and other specialized government entities. Capabilities provided could range from nuclear incident support to hostage or terrorist response forces; or even resources to assist in the formation or re-establishment of indigenous civil control, authority and capacity.
- **Training Resources.** On occasion, personnel, systems and equipment will be needed by the MAGTF commander to satisfy an unexpected, mission-specific training requirement. These capabilities could be obtained from government, commercial or academic sources.
- **Technical Support.** This type of support would be provided in response to unanticipated mission-specific technical requirements that are beyond the capability of the MAGTF. Examples include unforeseen enemy technical capabilities, communications limitations or anomalies, environmental encumbrances, or the development of technical deficiency trends in fielded equipment.
- **Materiel.** These are mission-specific items necessary to augment the MAGTF commander's capability to equip, operate, maintain and support MAGTF activities. These items may include additional medical capabilities, environmentally tailored support equipment, or other assets in support of unique mission requirements. Materials could be obtained through government channels, business entities, or even NGOs.

In addition to providing the MAGTF commander with the ability to deal with crises in real time, reach-back must evolve into a future-oriented, anticipatory art. The ability to focus our national power upon the crisis of the moment is important, yet we must strive for the development of predictive, in-depth analytic capabilities that capitalize on reach-back.

As a long-term objective, reach-back must offer opportunities to reduce the incidence of conflict; or preferably, to avoid it altogether. By providing the forward deployed commander with resources that enable the ability to anticipate and influence the development of a situation, he will then possess the means to apply proactive, preemptive solutions in the incipient phases of a crisis. The key is to develop options to physical intervention that will defuse potentially hostile situations *before* conflict erupts.

## **SUPPORTS OPERATIONAL MANEUVER FROM THE SEA (OMFTS)**

*OMFTS* is the fundamental, overarching warfighting concept, which serves as the foundation for future Marine Corps required operational capabilities. It describes the union of maneuver warfare and amphibious warfare through the application of maneuver warfare principles and the exploitation of technological advances. *OMFTS* addresses use of the sea as maneuver space and as a force protection measure.

Comprehensive command and coordination capabilities must support the peculiar requirements and new demands imposed by the future amphibious operations envisioned in *OMFTS*. First, Marines will strike from beyond the visible horizon at sea, with tactical unit commanders at the most junior levels maneuvering their respective forces throughout

### **THE LONG-TERM OBJECTIVES OF REACH-BACK**

- To enhance forward-deployed capabilities while reducing the “footprint” of forward-deployed forces.
- To proactively study the structural and cultural underpinnings of emerging problems, crises and conflicts around the world, and develop workable interventions.
- To identify our adversaries’ potential strategies, tactics and asymmetric responses (both militarily and domestically) to our actions, and develop preemptive options.
- To study ongoing operations for new developments, threats, or opportunities.

the attack, both at sea and ashore. Second, the landing force will not pause to establish a lodgment, or beachhead, as in past amphibious operations. Instead, tactical elements will continue maneuvering to strike

at objectives located well inland. Third, the landing force will *seabase* fires, logistics, and major command elements. Seabasing enhances force protection for headquarters and support units by reducing their direct exposure to enemy ground action or environmental threats found ashore. Concomitantly, it provides for increased operational tempo by freeing the landing force to maneuver without the encumbrance of protecting a vulnerable support “tail.” Additionally, a smaller landing force footprint ashore results in a reduced logistics burden, allowing more focused support to maneuver units striking towards their objectives.

## **PERFORMS EFFECTIVELY ACROSS THE RANGE OF OPERATIONS**

In the future, Marines will engage in a broad spectrum of evolutions ranging from major theater war, at one extreme, to activities which do not even have a conventional military character, at the other. In many cases, moreover, Marines will undertake missions involving multifaceted threats and disparate challenges, with several even occurring simultaneously: opposing hostile military forces, heavily-armed criminals, the presence of noncombatant civilians in a combat zone, starving refugees, environmental disasters, and a host of others. Comprehensive command and coordination capabilities must provide for swift and decisive action in any situation, however apparently tangled or complex.

## **SERVES AS A “CORNERSTONE”**

Forward deployed MAGTFs will frequently be, as they have been, the first forces to reach a crisis area. Indeed, seabasing permits MAGTFs to remain at sea as a crisis develops, free from dependency upon land bases. As additional forces and resources arrive in a forward area of operations, it is essential that they be quickly assimilated into a working command structure. Comprehensive command and coordination capabilities must support the MAGTF command



element's unique qualifications to serve as the "cornerstone" for the creation and tailoring of large coalition forces, which might include joint and combined military formations, as well as the non-traditional elements of national power. The seabased MAGTF command element, which can deploy quickly to a crisis area with a highly developed capacity to command and coordinate a wide array of military and civil forces and resources, will provide the Nation a crisis deterrence and response capability tailored to the challenges of the 21st Century.

## **CREATES A LEARNING ORGANIZATION**

Conflict takes an infinite number of forms because of the interaction of humans with one another and the environment. The Marine Corps must take a comprehensive view of command and coordination and use reach-back, vertical, and lateral communications to become not only a smart organization, but also a learning one. Patterns in adversary movement or behavior, the detection of anomalies and variants, and a sensing of the enemy's rhythm and tempo—essential to success in the art of warfighting—will reveal themselves to the MAGTF commander through application of diverse elements of national power. A learning organization anticipates the adversary's behavior, senses opportunities created by the adversary, and then shares and exploits this knowledge to defeat him.

## **ENCOURAGES INTUITIVE DECISIONMAKING**

Rapidity in decisionmaking builds *tempo*, which introduces rates of change and the need for masses of information, which exceed the enemy's ability to cope. Speed brings potentially decisive advantages on the battlefield. Ponderous analytical decisionmaking models which require mathematical computations and detailed comparisons using enormous quantities of information actually impose friction and sap the commander's ability to generate tempo. Intuitive or naturalistic decisionmaking, however, relies upon the commander's experience, judgment, and intellect to rapidly produce an *effective* plan—not necessarily a *perfect* plan. Systems and processes for comprehensive command and coordination of the MAGTF will support *intuitive decisionmaking*, sacrificing some degree of certainty and precision for speed and agility. Speed and agility create the "initial condition," allow us to preserve the initiative, and force the enemy to react by design to our actions.

## **ENABLES MUTUAL UNDERSTANDING WITH LIMITED EXCHANGE OF DATA**

*Understanding* is the highest form that information takes. It connotes deep awareness of the critical factors in any situation. Mutual understanding between leaders and subordinates is critical for shared situational awareness, as well as for the exercise of initiative, which results in dynamic and decisive operations. We can never expect to achieve full understanding of any situation because the “fog and friction” which are characteristic of military evolutions will always affect our ability to collect and analyze information. Our command and coordination tools must enhance our training and discipline and enable leaders at all levels to achieve the maximum possible mutual understanding, but with the minimum exchange of raw data.

## **EXPLOITS THE POWER OF IMPLICIT COMMUNICATIONS**

While sophisticated digital communications technologies provide for the transfer of large quantities of data, digital data lack certain qualities inherent in direct, personal human interaction. These intangible qualities constitute *implicit communications*. The more direct the human interaction, the greater the level of information exchange. “In-person” communications, for example, convey terabytes of information through facial expressions and gestures, in addition to the spoken word. Voice-only telecommunications are slightly less rich in information exchange than are “face-to-face” conversations, but even human voices alone provide an array of signals not found in written messages.

Implicit communications are vital to commanders because they remain the most effective means for converting *information* into the *understanding* that is central to effective decisionmaking. Therefore, MAGTF comprehensive command and coordination will employ methods and tools, which exploit capabilities for implicit communications.

## FUTURE DIRECTIONS

Through a seamless information architecture, future comprehensive command and coordination will provide two broad capabilities which will enhance the MAGTF's power and flexibility:

- **Increased freedom of action—Command includes control.** Control is a part of effective command, not resident in the technologies commanders use. The capability to provide superior command will further our ability to apply the tenets of maneuver warfare in all operations in which Marines will be engaged.
- **Access to all elements of national power,** including “reach-back” access to non-traditional elements of power. This capability will provide MAGTF commanders an improved ability to detect emerging crises, effect deterrent action, respond where necessary, and resolve threats to US interests.

Comprehensive command and coordination is yet another step in the evolution of the MAGTF. The realization of the new capacities it provides will help make 21st Century Marine forces “the most ready when the Nation generally is least ready.”

